copper wire and span distances within and between major metropolitan areas. It should be appreciated that other systems may also be used.) Switching matrix platform **114** is also connected via T1 communication links to a channel bank **116** for coupling to a plurality of operator and fulfillment agent telephones **118** and **119** respectively.

5   Each operator and fulfillment agent is equipped with a terminal **120** and **121** that includes a monitor and keyboard with associated dialing pad. The operator terminals are coupled over a data network **124** to a database server **126**, allowing an operator to access the data in database server **126** through the operator terminals **120** and fulfillment agent terminals **121**. The database server **126** contains standard telephone directory information.

10   The data network **124** further connects to a voice response unit (VRU) **130** and a switching matrix host computer **128** (also known as a PBX host), which in turn is connected to the switching matrix platform **114** by switch data link **122**. The data network **124** may, but not necessarily, also further connect to a directory listing or concierge database **136** and a caller profile database **134**. The caller profile database **134** stores detailed information about a

15   subscriber. Such details may include the subscriber's name, contact details, preferences, dietary requirements, likes and dislikes, past logged activity, etc. The directory listing or concierge database **136** may contain directory listing information on restaurants, events, accommodation, transportation, travel information and booking, stock prices, weather and other services such as grocery or flower delivery, etc.

20   In one embodiment, the VRU **130**, database server **126**, and switching matrix host **128** have redundant systems (not shown), which can operate as either back-up systems in the event of primary system failure, or provide load-sharing in either a master-slave or a peer-to-peer relationship with the primary system.

           The data network **124** consists of, but is not limited to, a local area network (LAN)

25   ~~127~~. The LAN ~~127~~ may connect to a plurality of other similar remote LANs ~~129~~ to form the WAN ~~115~~. The LANs ~~127 and 129~~ are connected to one another via routers or other WAN connections ~~125~~. The WAN may furthermore be connected by a frame relay connection which is a telecommunication service designed for cost-efficient data transmission for intermittent traffic between ~~local area networks~~ (LANs) and between end-points in a WAN. It should be

30   appreciated by one skilled in the art, that databases **126**, **134** and **136** may be located at each LAN or at a single central LAN.

A subscriber's mobile or wireless telephone ~~144~~ communicates with a wireless telephone network ~~146~~ which in turn is connected to a carrier network node ~~142~~ and carrier switching center ~~140~~.

The T1 voice connections 112, or voice links, provide connection between the directory assistance center's switching matrix platform 114 and the carrier's switching center ~~140~~, through which incoming directory assistance calls are received. The T1 voice connections 112 further provide connection to the network over which outgoing calls are placed (which network may be different than that used for incoming traffic). Similarly, T1 data connections 113, or data links, provide a signaling connection between the directory assistance center's node and the carrier's SS7 network node ~~142~~, through which incoming and outgoing signaling messages are transmitted (Common Channel Signaling System No. 7 (SS7) is a global standard for telecommunications defined by the International Telecommunication Union (ITU) Telecommunication Standardization Sector (ITU-T). The standard defines the procedures and protocol by which network elements in the public switched telephone network (PSTN) exchange information over a digital signaling network to effect wireless and wireline call setup, routing and control). The directory assistance node is contained within the switching matrix platform 114, but one with skill in the art will appreciate that the directory assistance node could also be a physically distinct component. If the outgoing call is being placed over a different network than that on which the incoming call was received, a second data connection to the outgoing network will be established.

The switching matrix platform 114 is described in detail in currently copending United States patent application 08/816,921, which is incorporated herein by reference. In general, referring to **FIGS. 8** and **9**, operation of switching matrix platform 114 is governed by computer-readable instructions stored and executed on switch matrix host computer 128. In one embodiment of the invention, switching matrix platform 114 is an Excel LNX 2000 and switch data link 122 is a 38.4 kb serial link; in another embodiment, switch data link is an Ethernet link. Switching matrix platform 114 includes expandable central processing unit ("EXCPU") 304 and/or matrix central processing unit ("MXCPU") 304. EXCPU/MXCPU 304 serves as an interface for switching matrix platform 114 to switching matrix host computer 128 (via switch data link 122). EXCPU/MXCPU 304 and other components of switching matrix platform 114 communicate through shared communication path 302, commonly called a "midplane." In the currently-described embodiment, midplane 302 utilizes

by the connected operator. Both the operator and the calling caller hear the message, which incorporates the name of the service or company to which the caller is a subscriber (in other words, the call is "branded"). The message ends with a prompt, thus cueing the caller to volunteer what information they are seeking.

5   When the automated greeting is complete, the VRU is disconnected, and the operator and the caller are left connected by a 2-way speech path. From this point, the caller is interacting with a live operator. In the event that the VRU is non-functional (for whatever reason), the incoming call is connected to the operator and a short "trill," or "zip" tone is played to indicate that a caller is on the line. (Note that once operators are logged in to the
10   system, they wear headsets, and have their telephones **118** permanently off-hook. Their telephones do not ring when a call is presented.) The operator then speaks a greeting and prompt in real time, instead of the VRU playing a message.

Concierge Service

15   The concierge service will now be illustrated by an example, as per an embodiment of a method illustrated in **FIGS. 10A** and **10B**. The scenario depicted in the illustrative example is where a caller using his wireless telephone at John F. Kennedy airport in New York, requires a dinner reservation at a vegetarian restaurant in "Cardiff by the Sea" near San Diego. It should be appreciated however, that a restaurant reservation service is but one type of service that the
20   telephonic concierge service may be able to provide. Other areas of use may include, but are not limited to: information, reservation and ticketing for events, accommodation, transportation and travel, information regarding news, stock prices and weather, and providing access to other services such as grocery or flower delivery, etc.

As per the illustrative example, illustrated in **FIGs 10** and **11**, the caller dials Directory
        (step 200)   *(step 202)*
25   Assistance (DA) ~~200~~. The caller is connected to an operator or a VRU ~~202~~. After a greeting, the caller is informed either by the VRU or by the operator about the telephonic concierge
        (step 204)
service ~~204~~. At this point the concierge service may also be explained to the caller. The caller may already be aware of the concierge service and therefore can skip the introduction and/or explanation of the service (240).

30   If the caller is interested in using the concierge service, she can either request directory
        (step 210)   *(step 206)*
listing information ~~210~~ or directly make a reservation request ~~208~~. If the caller requests
                    at step   *(step 211)*
restaurant listing information 210 the operator prompts the caller ~~211~~ for details regarding for

example the type of restaurant, the restaurant location, the approximate date and time of the

reservation and other preferences like for example dietary requirements, smoking or

non-smoking, outdoors or indoors, etc. The operator then inputs these details into a caller

profile database 213 *at step* (depicted by numeral 134 in FIG. 7A). Using a search engine, the

5   operator searches a directory listing database 212 *at step* (depicted by numeral 136 in FIG. 7A) for

restaurants based on the above-mentioned caller details and preferences. As per our example,

a suitable restaurant is located in "Cardiff by the Sea," near San Diego.

If the caller knew the name of the restaurant she wanted she may make a specific

reservation request 208 *(step 200)* directly on connection to the operator. In such a case or as per our

10   example, the operator then prompts the caller for reservation details 214 *(step 214)* such as the restaurant

name (if the operator did not locate it, supra), the callers name, a second choice of restaurant,

a required reservation date and time, alternative times, contact details and any additional

preferences such as smoking or non-smoking, type of credit card to be used, restaurant views,

etc. These details are input into a browser type graphical user interface (GUI) as shown in

15   FIG. 2. The reservation details are then stored in the caller profile database along with a

reservation request or ticket. The operator then informs the caller that the reservation request

is being processed and either reconnects the caller to the directory assistance operator or

disconnects the caller from the system 236 *(step 236)*.

The ticket is automatically forwarded to a fulfillment agent (FA) 216 *(step 216)* for processing. It

20   should be noted that the operator may also process the ticket herself. By default, the ticket is

automatically forwarded to a fulfillment agent at the directory assistance center where the call

was received, in our example New York. The operator, fulfillment agent or an automated

system at the directory assistance center will then forward the request to the directory

assistance center nearest the requested venue. In the illustrative example the request will be

25   forwarded to the San Diego directory assistance center. The fulfillment agent in San Diego

thus automatically receives the reservation request 218 *(step 218)*, shown by the graphical user interface

in FIGs. 3-6.

The fulfillment agent then attempts to contact the restaurant 220 *(step 220)*. Should the

fulfillment agent be able to contact the restaurant he will attempt to make a reservation 222 *(step 222)*.

30   The fulfillment agent then updates the status of the ticket 224 *(step 224)* on the system irrespective of

whether he was, in fact, successful in making the reservation or not, indicating last action

performed, result, reservation details, etc. (as seen in FIGs. 4 through 6). After each change of

status the fulfillment agent or the system automatically sets a next action time for his attention sometime in the future. The request then slots into the appropriate place in a fulfillment queue. The fulfillment agent cannot set nonsensical time periods like zero minutes or two years. New tickets are prioritized so as to be dealt with in a timely manner on a first-in-first-
5   out basis. After a set amount of unsuccessful tries, the fulfillment agent is automatically prompted to try the second restaurant choice.

After a set amount of time, say for example thirty minutes, the fulfillment agent retrieves the status of the request *(step 228)* and contacts the caller informing her of the status of her request *(step 230)*. The fulfillment agent may contact the caller by phone, fax, email or pager. The
10 caller may also call the service back before the caller is contacted by the fulfillment agent *(step 226)*. The reservation status is retrieved from the system *(step 228)* and the caller is informed of the current status of the reservation request *(step 230)*. If required, the operator or fulfillment agent may modify the reservation request *(step 232)* which is automatically reforwarded to the fulfillment agent *(step 218)*. Once the reservation is made or the caller indicates a desire to cancel the request,
15 the operator or fulfillment agent closes the ticket and connects the caller to directory assistance or disconnects the caller from the system *(step 236)*. *(step 234)*

An important feature of the present invention is an activity logging function *234*. All caller requests are logged in the caller profile database, as depicted in **FIG. 7A** by numeral **134**. The activity log helps with internal auditing and billing of that particular caller.
20 On-demand printed reservation status reports may be provided to call center managers and/or supervisors. Furthermore when the caller makes use of the concierge service, her mobile identification number (MIN), caller details, most frequent requests and past request activity is automatically presented to the operator. The caller therefore will not have to resupply repetitive details to the operator, thus speeding up the process and reducing the operator's
25 processing time. A fulfillment agent such as a supervisor who is not currently active, then handles any concierge requests that are active or open at that particular directory assistance center.

The system may generate reports such as the number of calls processed by a particular center or by the system as a whole. Other reports may include reports indicating the average
30 time spent on each ticket, the time spent fulfilling a ticket request and the time taken to contact a customer.